



Amendment Under 37 C.F.R. § 1.114(c)
U.S. Application No. 10/510,109

Attorney Docket No.: Q83563

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A dispenser head designed to be mounted on a movable hollow actuator and delivery rod of a fluid dispenser member, said head comprising a connection sleeve (20) designed to be engaged on said movable rod, the head defining a dispenser orifice (31), a duct (123) connecting said connection sleeve (20) to the dispenser orifice, and a press surface (11) which can be pressed in order to move the head axially by pushing the hollow rod into the dispenser member, the head further comprising a shutter (4) that is housed, at least in part, in said duct (123), and that is resiliently biased by spring means (47) towards said dispenser orifice (31), said shutter (4) including a contact zone (41) that bears in resilient leaktight manner against the dispenser orifice (31) so as to seal the dispenser orifice hermetically, said shutter being axially movable against the spring means in such a manner as to withdraw the contact zone from the dispenser orifice, thereby creating an outlet passage for the fluid when sufficient pressure is exerted on the press surface, the shutter including at least one abutment zone (440) that is resiliently biased by the spring means against a fixed support zone (34), the abutment zone thus taking up a portion of the thrust force generated by the spring means so that the contact zone bears with a constant limited force against the dispenser orifice, the dispenser head being characterized in that at least one of the dispenser orifice (31) and the contact zone (41) presents a frustoconical configuration; and

wherein the shutter (4) comprises an elongated plunger pin (40) connected to a shoulder (44), the plunger pin thus defining a free end forming the contact zone (41) designed to close the dispenser orifice (31) selectively, the shoulder (44) defining the abutment zone (34).

2. (original): A dispenser head according to claim 1, in which the abutment zone includes plane abutment surfaces (440) that are situated in symmetrical manner about the travel axis of the shutter, the abutment surfaces (440) coming to bear on associated plane support surfaces (34).

3. (canceled).

4. (currently amended): A dispenser head according to claim [3] 1, in which the plunger pin (40) extends into an outlet section (32) of the duct that includes an inlet end defining the support zone (34) and an outlet end defining the dispenser orifice (31).

5. (previously presented): A dispenser head according to claim 4, in which the outlet section (32) is formed with guide splines (35) that project radially inwards so as to hold the plunger pin (40) on the travel axis of the shutter.

6. (previously presented): A dispenser head according to claim 1, comprising a body (1), and a dispenser endpiece (3) connected in sealed manner on the body, the endpiece (3) forming

the duct (32) and the dispenser orifice (31).

7. (previously presented): A dispenser head according to claim 1, further comprising a displacement cam (24) designed to come into engagement with the shutter so as to move the shutter when sufficient pressure is exerted on the press surface, said cam being designed to come into engagement with an amplification cam (15) so as to amplify the movement of the shutter.

8. (original): A dispenser head according to claim 7, in which the connection sleeve (20) is made integrally as a single piece with the displacement cam (24), the amplification cam being secured to the press surface (11).

9. (previously presented): A dispenser head according to claim 1, in which the spring means (47) are made integrally as a single piece with the shutter (4) in the form of an elastically deformable loop (46, 47).

10. (currently amended): A dispenser head configured to be mounted on a movable hollow actuator and delivery rod of a fluid dispenser member, the head comprising:

a connection sleeve configured to engage the movable rod;

a dispenser orifice;

a duct connecting the connection sleeve to the dispenser orifice;

a press surface that when pressed moves the head axially so as to push the hollow rod

into the dispenser member; and

a shutter housed, at least in part, in the duct and that is resiliently biased by a spring towards the dispenser orifice, said shutter comprising a contact zone that bears in resilient leaktight manner against the dispenser orifice so as to hermetically seal the orifice, the shutter axially movable against the spring so as to withdraw the contact zone from the dispenser orifice, thereby creating an outlet passage for the fluid when sufficient pressure is exerted on the press surface, the shutter comprising at least one abutment zone that is resiliently biased by the spring against a fixed support zone, the abutment zone taking up a portion of the thrust force generated by the spring so that the contact zone bears with a constant limited force against the dispenser orifice; and

wherein at least one of the dispenser orifice and the contact zone is frustoconical and the abutment zone is remotely located from the contact zone; and

wherein the shutter comprises an elongated plunger pin that extends within an elongated outlet section of the duct, the outlet section having an interior surface extending between the contact zone and the abutment zone, the interior surface opposing a facing exterior surface of the pin and spaced apart from the exterior surface of the pin.

11. (previously presented): The dispenser head according to claim 10, wherein the abutment zone comprises plane abutment surfaces situated in symmetrical manner about a travel axis of the shutter, the abutment surfaces coming to bear on associated plane support surfaces.

12. (currently amended): A dispenser head according to claim 1, wherein the ~~shutter~~ comprises a plunger pin is connected to a shoulder, the plunger pin defining a free end forming the contact zone configured to close the dispenser orifice selectively, the shoulder defining the ~~support~~ abutment zone.

13. (currently amended): The dispenser head according to claim 12, wherein the plunger pin extends into ~~an~~ the outlet section of the duct that comprises an inlet end defining the support zone and an outlet end defining the dispenser orifice.

14. (previously presented): The dispenser head according to claim 13, wherein the outlet section is formed with guide splines that project radially inwards so as to hold the plunger pin on the travel axis of the shutter.

15. (previously presented): The dispenser head according to claim 10, further comprising a body and a dispenser endpiece connected in sealed manner on the body, the endpiece forming the duct and the dispenser orifice.

16. (previously presented): The dispenser head according to claim 10, further comprising a displacement cam configured to come into engagement with the shutter so as to move the shutter when sufficient pressure is exerted on the press surface, said cam being designed to come into engagement with an amplification cam so as to amplify the movement of

the shutter.

17. (previously presented): The dispenser head according to claim 16, wherein the connection sleeve is made integrally as a single piece with the displacement cam, the amplification cam being secured to the press surface.

18. (previously presented): The dispenser head according to claim 10, wherein the spring is made integrally as a single piece with the shutter in the form of an elastically deformable loop.

19. (new): The dispenser head according to claim 10, wherein the plunger pin has a diameter within the elongated outlet section that is less than a diameter of the opposing interior surface of the outlet section so as to be spaced apart therefrom and leave a gap.